

CLAIMS

1. A composite stent comprising:
an outer element open at opposite ends and having an outer surface engageable with an inner surface of a body lumen; and
an inner element open at opposite ends, said inner element engageable with said outer element to form a composite structure insertable within the body lumen, said inner element configured to assist said outer element in retaining a position of the outer element within the body lumen.
- 2 The composite stent of claim 1 wherein said outer element and said inner element are deployed separately and attached *in-vivo*.
3. The composite stent of claim 1 wherein said inner and said outer element are inserted within the body lumen as a unit.
4. The composite stent according to claim 1 wherein one of said inner and outer elements is made of a relatively biodegradable or bioabsorbable material and the other is made of a relatively non-biodegradable material.
5. The composite stent according to claim 1 wherein said inner element is a self-expanding metal stent.
6. The composite stent according to claim 1 wherein said inner element is removably attached inside said outer element so as to provide for removal of said inner element from the body lumen independent of said outer element.
7. The composite stent according to claim 1 wherein said inner element is configured to provide a radially outward bias so as to position said outer element into engagement with the body lumen.
8. The composite stent according to claim 1 wherein said outer element is configured to provide a radially outward bias so as to engage the body lumen.

9. The composite stent according to claim 1 wherein said inner element is configured to accept a balloon therein, inflation of the balloon forcing said inner element to expand so as to position said outer element into engagement with the body lumen.

10. The composite stent according to claim 1 wherein said outer element comprises a bioabsorbable stent material.

11. The composite stent according to claim 1 wherein said outer element comprises an implant selected from the group consisting of (i) a mesh; (ii) a graft; (iii) a tube; (iv) a stent; and (v) a tubular structure.

12. The composite stent according to claim 1 wherein said inner and outer elements are attached to each other by a non-biodegradable element.

13. The composite stent according to claim 12 wherein said non-biodegradable element is selected from the group consisting of (i) sutures, (ii) clips, (iii) staples, (iv) an adhesive, and (v) a mechanical interlock.

14. The composite stent according to claim 1 wherein said inner and outer elements are attached to each other by a bioabsorbable element.

15. The composite stent according to claim 14 wherein said bioabsorbable element is selected from the group consisting of (i) sutures, (ii) clips, (iii) staples, (iv) an adhesive, and (v) a mechanical interlock.

16. The composite stent according to claim 14 wherein said outer element is radiolucent.

17. The composite stent according to claim 1 wherein said inner element is radiopaque.

18. The composite stent according to claim 1 wherein said outer element comprises a material for receiving an injection of a therapeutic agent with said outer element in situ in the body lumen.

19. The composite stent according to claim 1 wherein said outer element includes a fluid reservoir and at least one needle configured to transport a fluid from said reservoir through the inner surface of the body lumen to an underlying area to be treated.

20. The composite stent according to claim 1 wherein an inner surface of said outer element is configured to mate with an outer surface of said inner element.

21. The composite stent according to claim 1 wherein an inner surface of said outer element includes a plurality of lands and grooves configured to engage respective grooves and lands of an outer surface of said inner element.

22. The composite stent of claim 1 further including a covering on one of said outer element and said inner element.

23. A composite stent comprising:
a bioabsorbable stent element; and
a self-expanding metal stent element releasably engageable within said bioabsorbable stent element for insertion within the body lumen as a unit, said bioabsorbable stent element biased to position said outer element into engagement with the body lumen.

24. The stent according to claim 23 wherein said bioabsorbable stent element comprises a bioabsorbable polymer.

25. A method of treatment comprising the steps of:
inserting a composite stent structure into a body lumen, said composite stent structure including an inner element attached to an outer element;
expanding said inner element to cause said outer element to be positioned into

contact with an inner wall of the body lumen; and

allowing for normal functioning of the body lumen by transporting a bodily substance through said composite stent structure.

26. The method according to claim 25 further comprising the steps of:
disengaging said inner element from said outer element; and
removing said inner element from said body lumen.

27. The method according to claim 25 wherein said step of expanding includes steps of:

inflating a balloon within said inner element causing it to expand;
deflating said balloon to disengage said inner element; and
removing said balloon from said body lumen.